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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Alan Michael Jaffee

7304

7146

7590  
JOHNS MANVILLE  
Legal Department  
10100 West Ute Avenue  
Littleton, CO 80127

09/22/2009

EXAMINER

CHOI, PETER Y

ART UNIT

PAPER NUMBER

1794

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,858	<b>Applicant(s)</b> JAFEE, ALAN MICHAEL	
	<b>Examiner</b> PETER Y. CHOI	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-15,17-27,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-15,17-27,31 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6, 8-15, 17-27, 31, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-6, 8-15, 17-27, 31, and 32, claims 1, 27 and 32 recite that the first face of the board has a smoothness that is sufficient to permit the board to be directly paintable. It is unclear exactly what the scope of claim necessarily entails, as Applicant's specification does not provide objective and/or quantitative characteristics which describe a “smoothness that is sufficient to permit the board to be directly paintable,” such that the scope of the claim is necessarily definite. For example, Applicant does not provide characteristic and/or measurable differences between a “sufficient” smoothness and an “insufficient” smoothness and a relationship between smoothness and paintability, such that the scope of the claim is necessarily definite.

Regarding claims 23-25, the claims recites “said gypsum core.” Claims 23-25 are dependent from claim 1 which does not recite a gypsum core. Therefore, the limitations lack proper antecedent basis in the claims.

***Response to Arguments***

Applicant's arguments filed August 13, 2009, have been fully considered but they are not persuasive. Applicant argues that the skilled person would recognize that the requisite smoothness and paintability are discernable by observing whether or not the surface is smooth enough that the underlying fibrous texture of the mat facer is not readily perceived after gypsum board employing that facer is painted so as to render the surface aesthetically objectionable. Examiner respectfully disagrees. The claims recite that the first face of the board has a smoothness that is sufficient to permit the board to be directly paintable. However, as set forth above, Applicant's specification does not provide objective and/or quantitative characteristics which describe a "smoothness that is sufficient to permit the board to be directly paintable," such that the scope of the claim is necessarily definite. For example, Applicant does not provide characteristic and/or measurable differences between a "sufficient" smoothness and an "insufficient" smoothness and a relationship between smoothness and paintability, such that the scope of the claim is necessarily definite. Although Applicant argues that the skilled person would recognize the requisite smoothness and paintability, Applicant's specification does not provide guidance as to such smoothness and paintability, such that the scope of the claims is necessarily definite.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 8-15, 17-19, 21-24, 26, 27, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,772,846 to Jaffee.

Jaffee is directed to a nonwoven glass fiber mat for facing gypsum board (Title).

As to claims 1-6, 8-15, 17-19, 21-24, 26, and 31, Jaffee teaches a nonwoven fibrous mat for use as a facer on a gypsum insulating board (see entire document including column 1 lines 6-67, column 2 line 2 to column 4 line 56, Examples 1-4). Jaffee teaches that the mat comprises a major portion of textile glass fibers and may comprise a minor portion of other fibers (column 2 lines 34-61). Jaffee teaches that the nonwoven mat is bound together with a latex (column 2 line 2 to column 4 line 56). The Examiner equates the latex to Applicant's "resinous binder". Jaffee teaches that the glass fibers can have a length between 0.25 and 1 inch which is equal to 6.35-25.4 mm (column 3 lines 34-61). Examiner equates this short length to Applicant's "chopped glass fibers". Jaffee teaches that the glass fibers have an average diameter from about 9 $\mu$ m to 20 $\mu$ m (column 3 lines 34-61). Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in USPN 4,647,496, the disclosure of which is hereby incorporated by reference. It should be noted that the phrase "incorporated by reference" means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly shown in Jaffee, the incorporated USPN 4,647,496 shows in Figure 8 that the nonwoven fibrous mat facing materials are applied to both sides of the gypsum board and it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the gypsum

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board of the prior art with the construction as shown in USPN 4,647,496, since Jaffee teaches the suitability of the gypsum board with such a construction. It should be noted that both of the facing materials have the same composition. USPN 4,647,496 further teaches that the gypsum material is “set” (Abstract). Examiner equates the facing material applied to the first and second sides of the gypsum board as “first facer” and “second facer”.

In regards to the transitional phrase of “consisting essentially of”, the phrase limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). The burden is upon Applicant to show that the additional components do affect the basic and novel characteristics of the invention. For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” See MPEP 2111.03. Applicant may wish to amend the claim to use the transitional phrase “consisting of” which excludes any element, step, or ingredient not specified in the claim. For the purposes of examination at this time, Examiner will interpret “consisting essentially of” as “comprising”.

Regarding claims 1-6, 8-15, 17-19, 21-24, 26, and 31, Jaffee does not appear to teach that the chopped glass fibers have an average diameter of between about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging specifically from 6-12 mm as required by claims 1 and 22, that the glass fibers having a diameter of between 9.5-12.5 $\mu\text{m}$  comprise at least 90% by weight of the glass fibers as required by claim 4, at least 95% as required by claim 5, at least 97% by weight as required by claim 6, that the chopped glass fibers have a fiber length ranging from about 6-

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18mm as required by claim 8, and that the fibrous mat has a basis weight of about  $1.25 \pm 0.2$  pounds per 100 square feet as required by claim 19. However, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the fiber diameter, length, proportion of glass fibers and basis weight since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the fiber diameter, length, proportion of glass fibers and basis weight in order to create a composite with the desired properties such as flexibility and strength while minimizing skin irritation during installation.

Additionally, it would have been obvious to one of ordinary skill in the gypsum board art at the time the invention was made to form the gypsum board of Jaffee, wherein the chopped glass fibers have an average diameter of between about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging from 6-12 mm, as Jaffee teaches that the chopped glass fibers can have average diameters from about 9 $\mu\text{m}$  to about 20 $\mu\text{m}$  and average lengths between 0.25 inches and 1 inch, and such a teaching would have indicated to one of ordinary skill in the art that all of the chopped glass fibers can have an average diameter and an average length within the claimed ranges.

Regarding claims 1-6, 8-15, 17-19, 21-24, 26, and 31, Jaffee does not specifically teach that the gypsum board is paintable, and that the first facer provides the first face of the gypsum board with a smoothness that is sufficient to permit the gypsum board to be directly paintable. For purposes of examination, “paintable” is interpreted as “capable of being painted.” Although

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the prior art does not teach the claimed characteristics, the claimed characteristics are deemed to be inherent to the prior art as the prior art teaches a substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention. Products of identical structure cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise.

Regarding claims 2 and 3, Jaffee teaches that the glass fibers can comprise any type of glass fibers, but E type, C type, T type and sodium borosilicate are preferred (column 3 lines 34-61).

Regarding claims 4-6, Jaffee teaches that the glass fibers have an average diameter from about 9 $\mu$ m to 20 $\mu$ m (column 3 lines 34-46). Jaffee teaches that the mat has a major portion of glass fibers and a may comprise a minor portion of glass or polymer fibers (Abstract). Jaffee further teaches that a minor portion of the glass fibers can have a diameter of 0.4-2 $\mu$ m (column 3 lines 34-61).

Regarding claim 8, Jaffee teaches that the glass fibers can all have the same length (column 3 lines 34-61).

Regarding claim 9, Jaffee teaches that the latex, or "resinous binder", comprises a crosslinkable vinyl chloride acrylate copolymer latex (column 3 line 61 to column 4 line 14). Jaffee states that an aqueous stearylated melamine emulsion can be added to the latex to act as an external crosslinker (column 4 lines 14-30). Therefore, it is the position of Examiner that the final product latex would be crosslinked as required by Applicant.



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Regarding claim 10, Jaffee teaches that the latex, or resinous binder, comprises a crosslinkable vinyl chloride acrylate copolymer latex (column 3 line 61 to column 4 line 14) which is subsequently crosslinked (column 2 line 2 to column 4 line 56). It is the position of Examiner that the crosslinked latex is equivalent to Applicant's "modified acrylic latex binder" because an acrylate is an acrylic.

Regarding claims 11-13, Jaffee teaches that the stearylated melamine emulsion, which acts as a crosslinker, is present in the amount of up to 10 weight percent (column 3 line 62 to column 4 line 37).

Regarding claim 13, Jaffee teaches that stearylated melamine emulsion is mixed with copolymer latex and formaldehyde to create a binder for the mats (column 3 line 62 to column 4 line 37, Examples 1-4).

Regarding claim 14, Jaffee teaches that the crosslinkable vinyl chloride acrylate copolymer latex has a glass transition temperature of up to 113 degrees F (column 3 line 62 to column 4 line 37). It should be noted that Applicant requires a glass transition temperature range of about 15 to 45 degrees Celsius (15-133 degrees F).

Regarding claim 15, Jaffee teaches that the stearylated melamine emulsion provides water repellency to the mat (column 4 lines 15-37).

Regarding claims 17-19, Jaffee teaches that the facer material or "fibrous mat" can weigh about 1.8 to 2.2 pounds per 100 square feet (column 3 lines 6-17).

Regarding claim 19, Jaffee teaches that the facer material or fibrous mat can preferably weigh about 1.8 to 2.2 pounds per 100 square feet (column 3 lines 6-17). Jaffee indicates that the mat can be any weight (column 3 lines 14-17).

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Regarding claim 21, Jaffee teaches that the second facer comprises a fibrous mat (column 1 lines 6-67, column 2 line 2 to column 4 line 56, Examples 1-4; USPN 4,647,496, Figure 8).

Regarding claim 22, the second facer is a fibrous mat comprising a non-woven, glass fiber web bonded together with a resinous binder, and the glass fibers consist essentially of chopped glass fibers having an average fiber diameter ranging from about 9.5 to 12.5  $\mu\text{m}$  and an average fiber length ranging from about 6 to 12 mm (column 1 lines 6-67, column 2 line 2 to column 4 line 56, Examples 1-4; USPN 4,647,496, Figure 8).

Regarding claims 23 and 24, it should be noted that Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in USPN 4,647,496, the disclosure of which was incorporated by reference. It should be noted that the phrase “incorporated by reference” means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly taught in Jaffee, the incorporated USPN 4,647,496 teaches that the gypsum core has water-resistant properties imparted by the incorporation of one or more additives (column 9 lines 49-60). USPN 4,647,496 also teaches that the gypsum board can further comprise a paper fiber which acts as a viscosity-control agent (column 13 lines 15-20).

Regarding claims 26 and 31, although Jaffee does not explicitly teach the claimed flame resistance to pass the test of ASTM Method E84, Class 1 as required by claim 26 and a permeability of at least 300  $\text{cfm/ft}^2$ , as required by claim 31, it is reasonable to presume that said properties are inherent. Support for said presumption is found in the use of like materials (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the

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claimed range) which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Jaffee product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

Regarding claim 27, Jaffee teaches a gypsum board having a first face and a second face and a non-woven fibrous mat affixed to at least one of the faces, the improvement wherein the mat comprises a glass fiber web bonded together with a resinous binder and the chopped glass fibers consist essentially of glass fibers having an average fiber diameter ranging from about 9.5 to 12.5 $\mu$ m and an average fiber length ranging from about 6 to 12 mm (see entire document including column 1 lines 6-67, column 2 line 2 to column 4 line 56, Examples 1-4).

Additionally, Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in USPN 4,647,496, the disclosure of which is hereby incorporated by reference. Therefore, although not explicitly shown in Jaffee, the incorporated USPN 4,647,496 shows in Figure 8 that the nonwoven fibrous mat facing materials are applied to both sides of the gypsum board and it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the gypsum board of the prior art with the construction as shown in USPN 4,647,496, since Jaffee teaches the suitability of the gypsum board with such a construction. It should be noted that both of the facing materials have the same composition. USPN 4,647,496 further teaches that the gypsum material is “set” (Abstract). Examiner equates the facing material applied to the first and second sides of the gypsum board as “first facer” and “second facer”.

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Regarding claim 27, Jaffee does not appear to teach that the chopped glass fibers have an average diameter of between about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging specifically from 6-12 mm. However, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the fiber diameter and length since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the fiber diameter, length, proportion of glass fibers and basis weight in order to create a composite with the desired properties such as flexibility and strength while minimizing skin irritation during installation.

Additionally, it would have been obvious to one of ordinary skill in the gypsum board art at the time the invention was made to form the gypsum board of Jaffee, wherein the chopped glass fibers have an average diameter of between about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging from 6-12 mm, as Jaffee teaches that the chopped glass fibers can have average diameters from about 9 $\mu\text{m}$  to about 20 $\mu\text{m}$  and average lengths between 0.25 inches and 1 inch, and such a teaching would have indicated to one of ordinary skill in the art that all of the chopped glass fibers can have an average diameter and an average length within the claimed ranges.

Regarding claim 27, Jaffee does not appear to specifically teach that the mat provides the first face of the gypsum board with a smoothness that is sufficient to permit the gypsum board to be directly paintable. Although the prior art does not teach the claimed characteristic, the claimed characteristic is deemed to be inherent to the prior art as the prior art teaches a

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substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention.

Products of identical structure cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise.

Regarding claim 32, Jaffee teaches a hydraulic set board, comprising a hydraulic set material layer having a first and a second face, and first and second facers affixed to the first and second faces, at least of the first facer being a fibrous mat comprising a non-woven, glass fiber web bonded together with a resinous binder, the glass fibers consisting essentially of chopped glass fibers having an average fiber diameter ranging from about 9.5 to 12.5 $\mu$ m and an average fiber length ranging from about 6 to 12mm (see entire document including column 1 lines 6-67, column 2 line 2 to column 4 line 56, Examples 1-4). Additionally, Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in USPN 4,647,496, the disclosure of which is hereby incorporated by reference. It should be noted that the phrase “incorporated by reference” means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly shown in Jaffee, the incorporated USPN 4,647,496 shows in Figure 8 that the nonwoven fibrous mat facing materials are applied to both sides of the gypsum board and it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the gypsum board of the prior art with the construction as shown in USPN 4,647,496, since Jaffee teaches the suitability of the gypsum board with such a construction. It should be noted that both of the facing materials have the same composition. USPN 4,647,496

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further teaches that the gypsum material is “set” (Abstract) and the set material is within the scope of the claimed “hydraulic.” Examiner equates the facing material applied to the first and second sides of the gypsum board as “first facer” and “second facer”.

Regarding claim 32, Jaffee does not appear to teach that the chopped glass fibers have an average diameter of between about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging specifically from 6-12 mm. However, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the fiber diameter and length since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the fiber diameter, length, proportion of glass fibers and basis weight in order to create a composite with the desired properties such as flexibility and strength while minimizing skin irritation during installation.

Additionally, it would have been obvious to one of ordinary skill in the gypsum board art at the time the invention was made to form the gypsum board of Jaffee, wherein the chopped glass fibers have an average diameter of between about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging from 6-12 mm, as Jaffee teaches that the chopped glass fibers can have average diameters from about 9 $\mu\text{m}$  to about 20 $\mu\text{m}$  and average lengths between 0.25 inches and 1 inch, and such a teaching would have indicated to one of ordinary skill in the art that all of the chopped glass fibers can have an average diameter and an average length within the claimed ranges.

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Regarding claim 32, Jaffee does not appear to specifically teach that the board is paintable and that the first facer provides the first face of the hydraulic set board with a smoothness that is sufficient to permit the hydraulic set board to be directly paintable. Although the prior art does not teach the claimed characteristics, the claimed characteristics are deemed to be inherent to the prior art as the prior art teaches a substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention. Products of identical structure cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee, as applied to claims 1-6, 8-15, 17-19, 21-24, 26, 27, 31, and 32 above, in view of USPN 6,187,697 to Jaffee (herein referred to as “‘697”).

Regarding claim 13, the prior art appears to teach that the resinous binder comprises melamine formaldehyde. Additionally, Jaffee teaches that the binder may comprise crosslinked vinyl chloride acrylate copolymer, a cross-linker, and urea formaldehyde (*see for example* Jaffee, Examples 1-4). Additionally, ‘697 teaches a substantially similar facer suitable for use with gypsum board, the facer comprising a non-woven glass fiber web bonded with a resinous binder, the glass fibers having an exemplary diameter of 10 $\mu$ m and having an exemplary length of about 0.25 inches, wherein the binder comprises urea formaldehyde or melamine formaldehyde (‘697, column 1 line 4 to column 3 line 5, column 3 lines 17-35, column 5 lines 26-60, column 6 line 65 to column 7 line 12). It would have been obvious to one of ordinary skill in the gypsum board

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facer art at the time the invention was made to form the facers of the prior art, wherein the binder comprises melamine formaldehyde, as taught by '697, motivated by the desire of forming a conventional gypsum board with facers comprising binders known in the art to be suitable and functionally equivalent in the gypsum board facer art, and the simple substitution of one known binder for another would yield predictable results.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee, as applied to claims 1-6, 8-15, 17-19, 21-24, 26, 27, 31, and 32 above, in view of USPN 6,365,533 to Horner.

Jaffee teaches the claimed invention above but fails to disclose that the second facer can comprise kraft paper.

Horner is directed to a foamed facer suitable for use in the construction industry comprising a dry preformed glass fiber mat containing a binder (Abstract). Horner teaches that the first and second facers can be of the same or of a different composition than that of this invention. More specifically, one of the facer sheets maybe be selected from those conventionally employed such as kraft paper and the other facer sheet is one of the current invention which enhances the composite (column 6 lines 1-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a kraft paper as one of the facer materials as suggested by Horner in the gypsum board composite of Jaffee motivated by the desire to save manufacturing costs by employing a conventional facer on one side and the improved and enhanced facer on the other side.



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7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee, as applied to claims 1-6, 8-15, 17-19, 21-24, 26, 27, 31, and 32 above, in view of USPN 7,056,582 to Carbo.

Jaffee teaches the claimed invention but fails to teach that the core may further comprise a biocide. Carbo is directed to a mold resistant acoustical panel (Title). Carbo teaches, during manufacture of the panels, the zinc pyrithione is added to the slurry of water, fillers and binders that is used to form the panel. It is particularly surprising that the pyrithione salt added to the core protects both the panel core and the coating material. The panels of the present invention having zinc pyrithione incorporated only in the core exhibit improved mold resistance to an extent that would not be expected by incorporation of the zinc pyrithione into the core only. Regardless of the actual mechanism, biocides that display this behavior are useful in the acoustical panels of this invention (column 5 lines 25-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a biocide into the core of Jaffee as suggested by Carbo motivated by the desire to create a mold resistant panel.

### ***Response to Arguments***

8. Applicant's arguments filed August 13, 2009, have been fully considered but they are not persuasive. Applicant argues that the Jaffee Declarations of April 26, 2006, and May 3, 2006, constitute objective evidence and that the qualification of the Declarant are clearly sufficient to establish him as having at least ordinary skill. Examiner respectfully disagrees. It should be noted that the Record does not show multiple Declarations of April 26, 2006, and May 3, 2006.

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Applicant's Declaration of May 3, 2006, was mailed by Applicant on April 26, 2006.

Additionally, it should be noted that Applicant/Inventor and Declarant are the same Alan Jaffee.

Applicant's arguments are moot as they were previously addressed by the Board of Patent Appeals & Interferences (herein "BPAI") in the BPAI Decision of January 29, 2009. The BPAI's arguments and conclusions are set forth below.

" First, Jaffee has not established that the test using camera images, software and visual observation is an art recognized test or is reliable. Also, only one test was carried out for each fiber diameter and length, and Jaffee has not established that the test is repeatable. Moreover, the cause-and- effect relationship between standard error and surface smoothness is lost in a multiple unfixed variables. *See In re Heyna*, 360 F.2d 222,228 (CCPA 1966); *In re Dunn*, 349 F.2d 433,439 (CCPA 1965). Jaffee changed not only the average fiber diameter and length, but also the average intensity (Decl. I: ¶ 14). If, for samples 1 and 4, the same standard deviation were obtained at the 1837 average intensity used for the Appellant's inventive sample 2, the standard errors would be, respectively, 7.9% and 7.8%, which are very close to the 7.6% for the Appellant's inventive sample 2.

Second, it is not enough for the Appellant to show that the results for the Appellant's invention and the comparative examples differ. The difference must be shown to be an unexpected difference. *See In re Freeman*, 474 F.2d 1318, 1324 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972). Jaffee states that one of ordinary skill in the art would have expected that a smoother surface would be obtained using a smaller fiber diameter (Decl. I, ¶ 17), but Jaffee has not established that one of ordinary skill in the art would not have expected a larger length to diameter ratio than that in sample 3 to produce a smoother surface.

Third, the evidence is not commensurate in scope with the claims. *See In re Grasselli*, 713 F.2d 731,743 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035 (CCPA 1980). The Appellant's claim 1 encompasses average fiber diameters from about 9.5 to 12.5 microns, and average fiber lengths from about 6 to 12 mm, yet Jaffee provides only one sample at an average fiber diameter of 11 microns and an average fiber length of 12 microns. We find in the evidence of record no reasonable basis for concluding that mats made of fibers having the other average diameters and lengths encompassed by the Appellant's claims would behave as a class in the same manner as the particular sample tested. *See In re Lindner*, 457 F.2d 506, 508 (CCPA 1972); *In re Susi*, 440 F.2d 442, 445-46 (CCPA 1971).

The Appellant has not shown reversible error in the Examiner's determination that the Appellant's Declarations fail to overcome the prima facie case of obviousness"

(See BPAI Decision of January 29, 2009, pages 7-9).

Therefore, Applicant's arguments are not persuasive.

Applicant argues that Examiner has not pointed to any species of gypsum board falling within Applicant's claimed ranges. Examiner respectfully disagrees. It is unclear what ranges are being argued, as Applicant appears to be arguing that the claimed smoothness is not an inherent property of the prior art. It should be noted that a smoothness range is not claimed. Therefore, Applicant is presumably arguing that the prior art does not teach the claimed fiber diameter and length ranges. Additionally, Applicant appears to be arguing that the claimed smoothness is not inherent to the prior art since the smoothness is related to the claimed fiber diameter and length ranges, and the prior art does not teach the claimed fiber diameter and length ranges. Additionally, it should be noted that Applicant's recitation of smoothness and paintability are indefinite for the reasons set forth above. Additionally, it should be noted that Applicant's arguments directed to the Declaration of May 3, 2006, were addressed above.

Jaffee teaches a nonwoven glass fiber mat for facing gypsum board (Title) comprising E glass fibers having average diameter from about 9 $\mu$ m to about 20 $\mu$ m, preferably from about 10 $\mu$ m to about 16 $\mu$ m (column 3 lines 33-46). The fiber lengths may be 0.25 inches to 1.0 inch, which is equivalent to 6.35 mm to 25.4 mm. Therefore, Jaffee renders obvious the claimed fiber diameter and fiber length ranges.

Additionally, the BPAI Decision of January 29, 2009, previously addressed the obviousness of the claimed fiber diameter range. The BPAI's arguments and conclusions are set forth below.

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“ Claim 4 requires that at least about 90 wt% of chopped glass fibers have a diameter ranging between about 9.5 and 12.5 microns. The Appellant argues that there is no disclosure in Jaffee that calls for a narrow range of fiber diameters (Br. 47-48). Jaffee's disclosure that the glass fibers are chopped glass fibers and typically have average diameters from about 9 microns to about 20 microns (col. 3, 11.38-39; col. 4, 1.67) would have indicated to one of ordinary skill in the art that all of the chopped glass fibers can have an average diameter within that range which includes the Appellant's range of between about 9.5 and 12.5 microns.

The Appellant has not shown reversible error in the Examiner's determination that Jaffee would have rendered the invention claimed in the Appellant's claims 4, 26, 29, and 31 prima facie obvious to one of ordinary skill in the art”

(See BPAI Decision of January 29, 2009, pages 3-9).

Therefore, Applicant's arguments are not persuasive as the prior art renders obvious the claimed invention.

Applicant argues that '697 does not teach the claimed fiber diameter and fiber length in combination. Examiner respectfully disagrees. Under 35 U.S.C. 103 (a), the obviousness of an invention cannot be established by combining the teachings of the prior art references absent some teaching, suggestion, incentive, or predictability supporting the combination. This does not mean that the cited prior art references must specifically suggest making the combination. A suggestion or motivation to combine references is an appropriate method for determining obviousness, however it is just one of a number of valid rationales for doing so. The test for obviousness is what the combined teachings of the prior art references would have suggested to those of ordinary skill in the art. This test requires us to take into account not only the specific teachings of the prior art references, but also any inferences which one skilled in the art would reasonably be expected to draw therefrom.

Additionally, a patent for a combination, which only unites old elements with no change in their respective functions, obviously withdraws what is already known into the field of its

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monopoly and diminishes the resources available to skillful men. When a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.

In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. As set forth above, '697 is not relied on to teach the claimed fiber diameter and fiber length as Jaffee renders obvious each of the claimed fiber diameter and fiber length. Therefore, Applicant's arguments are not commensurate in scope with the current rejection.

As set forth above, '697 is relied on to teach that it was known in the gypsum board art to form a facer comprising a non-woven glass fiber web bonded with a resinous binder, wherein the binder comprises urea formaldehyde or melamine formaldehyde ('697, column 1 line 4 to column 3 line 5, column 3 lines 17-35, column 5 lines 26-60, column 6 line 65 to column 7 line 12). Therefore, it would have been obvious to one of ordinary skill in the gypsum board facer art at the time the invention was made to form the facers of the prior art, wherein the binder comprises melamine formaldehyde, as taught by '697, motivated by the desire of forming a conventional gypsum board with facers comprising binders known in the art to be suitable and functionally equivalent in the gypsum board facer art, and the simple substitution of one known binder for another would yield predictable results.

Applicant argues that nowhere does Horner contemplate the gypsum board recited by Applicant. Additionally, Applicant argues that Examiner has not pointed to any disclosure in Horner that indicates his facer, whether the preformed mat substrate precursor or the facer after

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being coated, has any pertinence to gypsum board manufacture. Examiner respectfully disagrees. In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. As set forth above, Horner is not relied on to teach the claimed gypsum board. Therefore, Applicant's arguments are not commensurate in scope with the current rejection.

As set forth above, Horner is directed to a foamed facer suitable for use in the construction industry comprising a dry preformed glass fiber mat containing a binder (Abstract). Horner teaches that the first and second facers can be of the same or of a different composition than that of this invention. More specifically, one of the facer sheets maybe be selected from those conventionally employed such as kraft paper and the other facer sheet is one of the current invention which enhances the composite (column 6 lines 1-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a kraft paper as one of the facer materials as suggested by Horner in the gypsum board composite of Jaffee motivated by the desire to save manufacturing costs by employing a conventional facer on one side and the improved and enhanced facer on the other side.

Applicant argues that Horner, like Jaffee, fails to recognize the possibility of a gypsum or like construction board that is faced with a glass fiber mat as claimed. Examiner respectfully disagrees. In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. As set forth above, Horner is not relied on to teach the claimed gypsum board. Therefore, Applicant's arguments are not commensurate in scope with the

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current rejection. As set forth above, Horner teaches a facer suitable for use in the construction industry, particularly for insulation board manufacture, comprising a dry preformed fiber mat containing a binder for the fibers, preferably a preformed glass mat (*See* Horner, Abstract). Therefore, the prior art references are analogous art and properly combinable.

Applicant argues that Horner does not recognize paintability, and does not disclose or suggest the claimed fiber diameter range. Examiner respectfully disagrees. In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. As set forth above, Horner is not relied on to teach the claimed gypsum board. Therefore, Applicant's arguments are not commensurate in scope with the current rejection.

Although Applicant argues that Horner does not recognize paintability, it is reasonable for one of ordinary skill in the art to presume that Applicant has not discovered paintability of facers for construction board. The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. Since the prior art renders obvious the claimed fiber diameter range, and since the BPAI affirmed such a conclusion, and since Applicant argues that smoothness is related to the claimed fiber diameter and length ranges, such "smoothness" would naturally flow from the teachings of the prior art, absent evidence to the contrary.

Additionally, as set forth above, the prior art does not appear to specifically teach that the board is paintable and that the first facer provides the first face of the gypsum board with a

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smoothness that is sufficient to permit the gypsum board to be directly paintable. Although the prior art does not teach the claimed characteristics, the claimed characteristics are deemed to be inherent to the prior art as the prior art teaches a substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention. Products of identical structure cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise.

Applicant argues that Carbo fails to recognize the possibility of a gypsum or like construction board faced with the claimed facers, having the claimed smoothness. In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. As set forth above, Carbo is not relied on to teach the claimed gypsum board. Therefore, Applicant's arguments are not commensurate in scope with the current rejection.

As set forth above, although the prior art does not teach the claimed characteristics, the claimed characteristics are deemed to be inherent to the prior art as the prior art teaches a substantially similar structure and composition (a gypsum layer and two face layers wherein the first facer comprising a nonwoven glass fiber web and resinous binder, wherein the glass fibers have an average diameter and length within the claimed range) as the claimed invention. Products of identical structure cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise. Additionally, as set forth above, it would have been obvious to one of ordinary skill in the gypsum board art at the time the invention was made to form the gypsum board of Jaffee, wherein the chopped glass fibers have an average diameter of between



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about 9.5 and 12.5  $\mu\text{m}$  and an average fiber length ranging from 6-12 mm, as Jaffee teaches that the chopped glass fibers can have average diameters from about 9 $\mu\text{m}$  to about 20 $\mu\text{m}$  and average lengths between 0.25 inches and 1 inch, and such a teaching would have indicated to one of ordinary skill in the art that all of the chopped glass fibers can have an average diameter and an average length within the claimed ranges. Therefore, based on Applicant's arguments, such "smoothness" would naturally flow from the teachings of the prior art, absent evidence to the contrary.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER Y. CHOI whose telephone number is (571)272-6730.

The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter Y Choi/  
Examiner, Art Unit 1794

/Andrew T Piziali/  
Primary Examiner, Art Unit 1794